

 <b>CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY</b> <b>AIR RESOURCES BOARD</b>	<b>KUBOTA CORPORATION</b>	<b>EXECUTIVE ORDER U-R-025-0049</b> New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2002	2KBXL719KCB	0.479, 0.656, 0.719	Diesel	3000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Indirect Diesel Injection			Riding Mower, Other Industrial Equipment	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):


RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+Nox	CO	PM	ACCEL	LUG	PEAK
KW < 8	Tier 1	STD	N/A	N/A	10.5	8.0	1.0	20	15	50
8 ≤ KW < 19	Tier 1	STD	N/A	N/A	9.5	6.6	0.80	20	15	50
		CERT	--	--	7.4	3.8	0.32	4	4	6

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

**This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.**

Executed at El Monte, California on this 1<sup>st</sup> day of November 2001.

  
 R. B. Summerfield, Chief  
 Mobile Source Operations Division

Model Year: 2002  
 Manufacturer: KUBOTA Corporation  
 Engine Family: 2KDXL719KCB

Attachment  
pg 1 of 3

Issued:  
 Revised: 10/11/2001  
 E.O. Number: U-R-25-49

### Small Off-Road Engine Model Summary Form

Units for Table: hp

Worst Case?	47. Model Designation	48. Sales Code	49. Displ (cc)	50. Bore/Stroke	51. Ignition Timing	52. Max Power	53. Rated Speed (RPM)	54. Rated Torque	55. Torque Speed (RPM)	56. Emiss Control Sys
X	Z482-E1	50-State	479	67/68	N/A	11.4	3200	22.5ft-lb	2300	IDI
	Z482-E2	50-State	479	67/68	N/A	13.3	3600	21.9ft-lb	2600	IDI
	Z482-E3	50-State	479	67/68	N/A	11.1	3000	20.3ft-lb	2500	IDI
	Z482-E4	50-State	479	67/68	N/A	11.1	3000	22.1ft-lb	2300	IDI
	Z482-E5	50-State	479	67/68	N/A	9.7	2600	20.1ft-lb	2200	IDI
	Z482-E6	50-State	479	67/68	N/A	8.7	2450	20.5ft-lb	1500	IDI
	Z482-E7	50-State	479	67/68	N/A	8.9	2400	19.3ft-lb	1900	IDI
	Z482-E8	50-State	479	67/68	N/A	8.0	2200	19.2ft-lb	1900	IDI
	Z482-E9	50-State	479	67/68	N/A	11.1	3000	20.9ft-lb	2600	IDI
	D662-E1	50-State	656	64/68	N/A	18.5	3600	30.8ft-lb	2600	IDI
	D662-E2	50-State	656	64/68	N/A	17.0	3350	29.4ft-lb	2600	IDI

Model Year: 2002  
 Manufacturer: KUBOTA Corporation  
 Engine Family: 2KBXL719KCB

Issued:  
 Revised: 10/11/2001  
 E.O. Number: U-R-25-49

Attachment  
pg 2 of 3

### Small Off-Road Engine Model Summary Form

Units for Table: hp

Worst Case?	47. Model Designation	48. Sales Code	49. Displ (cc)	50. Bore/Stroke	51. Ignition Timing	52. Max Power	53. Rated Speed (RPM)	54. Rated Torque	55. Torque Speed (RPM)	56. Emiss Control Sys
	D662-E3	50-State	656	64/68	N/A	16.4	3200	30.3ft-lb	2400	IDI
	D662-E4	50-State	656	64/68	N/A	15.3	3200	29.6ft-lb	2300	IDI
	D662-E5	50-State	656	64/68	N/A	15.0	3000	30.1ft-lb	2300	IDI
	D722-E1	50-State	719	67/68	N/A	20.0 (15.0)	3600	33.8ft-lb	2600	IDI
	D722-E2	50-State	719	67/68	N/A	20.0	3600	33.8ft-lb	2600	IDI
	D722-E3	50-State	719	67/68	N/A	18.8	3400	32.2ft-lb	2600	IDI
	D722-E4	50-State	719	67/68	N/A	17.7	3200	31.3ft-lb	2600	IDI
	D722-E5	50-State	719	67/68	N/A	17.7	3200	29.6ft-lb	2400	IDI
	D722-E6	50-State	719	67/68	N/A	16.9	3200	33.3ft-lb	2200	IDI
	D722-E7	50-State	719	67/68	N/A	16.6	3200	33.1ft-lb	2200	IDI
	D722-E8	50-State	719	67/68	N/A	16.6	3000	29.7ft-lb	2600	IDI

Model Year: 2002  
 Manufacturer: KUBOTA Corporation  
 Engine Family: 2KBXL719KCB

Attachment  
 pg 3 of 3

Issued:  
 Revised: 10/11/2001  
 E.O. Number: U-R-25-49

### Small Off-Road Engine Model Summary Form

Units for Table: hp

Worst Case?	47. Model Designation	48. Sales Code	49. Displ (cc)	50. Bore/Stroke	51. Ignition Timing	52. Max Power	53. Rated Speed (RPM)	54. Rated Torque	55. Torque Speed (RPM)	56. Emiss Control Sys
	D722-E9	50-State	719	67/68	N/A	16.6	3000	33.9ft-lb	2200	IDI
	D722-E10	50-State	719	67/68	N/A	15.4	2950	31.9ft-lb	2200	IDI
	D722-E11	50-State	719	67/68	N/A	15.2	2900	33.8ft-lb	2200	IDI
	D722-E12	50-State	719	67/68	N/A	15.4	2800	32.1ft-lb	2200	IDI
	D722-E13	50-State	719	67/68	N/A	14.9	2800	31.1ft-lb	2200	IDI
	D722-E14	50-State	719	67/68	N/A	15.2	2700	29.4ft-lb	2400	IDI
	D722-E15	50-State	719	67/68	N/A	14.5	2600	30.2ft-lb	2200	IDI
	D722-E16	50-State	719	67/68	N/A	11.9	2200	27.2ft-lb	1600	IDI
	D722-E17	50-State	719	67/68	N/A	10.2	1900	29.6ft-lb	1600	IDI
	D722-E18	50-State	719	67/68	N/A	10.2	2000	29.6ft-lb	1600	IDI
	D722-E19	50-State	719	67/68	N/A	15.6	3000	29.9ft-lb	2000	IDI